AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

1. (Currently Amended) Method for reception of a signal implementing a modulation with multiple carriers and with multiple access by division of spread codes, of the type comprising a de-modulation stage by application of a mathematical transform from the temporal domain to the frequency domain, an equalisation stage of the transformed signal and a de-spreading stage of the equalised signal, characterised in that said equalisation stage ~~takes into account~~ comprises, for each of the components of said transformed signal, at least one equalisation element representative of disturbances affecting the carrier carrying said component, at least one equalisation element representative of disturbances affecting ~~and~~ at least one other of said carriers, and at least one element representative of some of said spread codes.

2. (Original) Reception method according to claim 1, characterised in that said equalisation stage implements an equalisation matrix carrying equalisation coefficients representative of the transmission channel, at least certain of the coefficients other than the coefficients of the diagonal of the matrix sometimes being non nil.

3. (Original) Reception method according to claim 2, characterised in that the coefficients of said weighting matrix are determined according to the Wiener filtering technique applied globally over the received signal as a whole, taking into account the de-spreading functions.

4. (Original) Reception method according to claim 3, characterised in that said weighting matrix is written

$$G = H^{*}.(H.C.A.C^{T}.H^{*} + \frac{\sigma_N^2}{E_S}.I)^{-1}$$

with: H = matrix representative of the transmission channel;

C = matrix of the spread codes;

A = $\{a_{jj}\}$: diagonal matrix with n_{jj} non nil if the user j is active;

σ^2_N = noise variance affecting each sub-carrier;

E_S = mean power of received signals;

I = the identity matrix.

5. (Original) Reception method according to claim 4, characterised in that the estimated quantity σ^2_N/E_S is compared to a threshold value, and replaced by said threshold value when it is lower than the latter.

6. (Currently Amended) Reception method according to claim 4, characterised in that one implements an alternative detection method when the estimated quantity σ^2_N/E_S is lower ~~then~~ than a predetermined threshold value.

7. (Previously Presented) Reception method according to claim 3, characterised in that said weighting matrix is determined with the aid of an iterative procedure implementing a gradient algorithm.

8. (Previously Presented) Reception method according to claim 1, of the type implementing a multi-user detection technique, according to which the different spread codes of the multiple users are known from the receiver, characterised in that the same

equalisation technique is also used in a stage for annulment of multiple access interference.

9. (Original) Reception method according to claim 8, characterised in that said interference annulment stage is iterative, and comprises at least two successive equalisation steps.

10. (Previously Presented) Reception method according to claim 8, characterised in that it implements:

- an initial stage producing an estimate of multi-user interference;
- a subtraction stage of said estimate of multi-user interference from the received signal;
- an equalisation stage on the corrected signal thus obtained.

11. (Previously Presented) Equalisation method implemented in the reception method according to claim 1.

12. (Previously Presented) Reception device implementing the method according to claim 1.

13. (Presently Amended) The method according to claim 11, wherein ~~equalizing~~ equalising disturbances is performed by an equalisation matrix carrying equalisation coefficients representative of the transmission channel, at least certain of the coefficients other than the coefficients of the diagonal of the matrix being non nil.

14. (Original) The method according to claim 13, characterised in that the coefficients of said equalisation matrix are determined according to the Wiener filtering technique applied globally over

the received signal as a whole, taking into account the de-spreading functions.

15. (Original) The method according to claim 14, characterised in that said weighting matrix is

$$G = H^{*}.(H.C.A.C^{T}.H^{*} + \frac{\sigma_N^2}{E_S}.I)^{-1}$$

where H = matrix representative of the transmission channel;

C = matrix of the spread codes;

A = $\{a_{jj}\}$: diagonal matrix with n_{jj} non nil if the user j is active;

$\sigma^2{}_N$ = noise variance affecting each sub-carrier;

E_S = mean power of received signals;

I = the identity matrix.

16. (Original) The process according to claim 15, characterised in that the estimated quantity $\sigma^2{}_N/E_S$ is compared to a threshold value, and replaced by said threshold value when it is lower than the latter.

17. (Original) The receiver according to claim 12, further including an equalisation matrix carrying equalisation coefficients representative of the transmission channel, at least certain of the coefficients other than the coefficients of the diagonal of the matrix being non nil.

18. (Original) The receiver according to claim 17, characterised in that the coefficients of said equalisation matrix are determined according to the Wiener filtering technique applied globally over the received signal as a whole, taking into account the de-spreading functions.

19. (Original) The receiver according to claim 18, characterised in that said weighting matrix is

$$G = H^{\bullet}.(H.C.A.C^{T}.H^{\bullet} + \frac{\sigma_N^2}{E_S}.I)^{-1}$$

where H = matrix representative of the transmission channel;

C = matrix of the spread codes;

A = $\{a_{jj}\}$: diagonal matrix with n_{jj} non nil if the user j is active;

σ^2_N = noise variance affecting each sub-carrier;

E_S = mean power of received signals;

I = the identity matrix.

20. (Original) The receiver according to claim 19, characterised in that the estimated quantity σ^2_N/E_S is compared to a threshold value, and replaced by said threshold value when it is lower than the latter.